ANCIENT SEAS OF THE MOON

A. L. Sukhanov

ABSTRACT. Research on lunar maria performed by American and Russian scientists is discussed. The discussion begins with the analysis of J. E. Spurr in 1944.

FEATURES OF LAVA-SHEET FORMATION ON THE MOON

AC A. M. Gurkin, AC Ye. M. Rayburd, AC N. V. Slonimskaya,
AC N. G. Suchkin, and AC I. A. Fomina

ABSTRACT. Observations of volcanic activity on the moon are discussed. The heat losses experienced by the lava due to radiation, convection and other processes are analyzed. Other problems analyzed include hardening of the lava, bubble rising in the melt, and other physical phenomena.

Food Technology

USSR

UDC 612.392.9:612.398.3-083

SLONIMSKIY, G. L., BRAUDO, Ye. Ye., YERTANOV, I. D., TOLSTOGUZOV, V. B., BONDAREVA, E. S., and PLASHCHINA, I. G., Laboratory of Physics of Polymers, Institute of Elementoorganic Compounds, Academy of Sciences USSR

"Susceptibility of Proteins in New Food Products to Attack by Proteolytic Enzymes"

Moscow, Voprosy Pitaniya, No 6, 1970, pp 25-31

Abstract: The susceptibility of proteins in different kinds of synthetic caviar (based on casein, evaporated milk, etc.) and synthetic groats to attack by proteolytic enzymes of the gastrointestinal tract in vitro was compared with the susceptibility of the original protein mixtures used to make the caviar and groats. The susceptibility of proteins to attack by pepsin in all the kinds of caviar studied was higher than that of the proteins in the original mixture. The degree of trypsin and chymotrypsin proteolysis of the pepsin-digested proteins in the caviar was equal to or higher than the degree of proteolysis of the pepsin-digested original protein mixtures. The degree of pepsin proteolysis of proteins in the synthetic groats was equal to or lower than the degree of proteolysis of

1/2

USSR

SLONIMSKIY, G. L., et al, Voprosy Pitaniya, No 6, 1970, pp 25-31

the original protein mixtures. The degree of trypsin proteolysis of the pepsin-digested proteins in the groats was equal to the degree of proteolysis of the pepsin-digested original protein mixtures.

UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--PACKING OF MACROMOLECULES IN POLYMERS -U-

AUTHOR-(03)-SLONIMSKIY, G.L., ASKADSKIY, A.A., KITAYGORODSKIY, A.I.

COUNTRY OF INFO--USSR

5

SOURCE--VYSOLOMOL. SOEDIN., SER. A 1970, 12(3), 494-512

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MACROMOLECULE, POLYMER, SPECIFIC DENSITY, ISOMER, CALCULATION,
MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1189 STEP NO--UR/0459/70/012/003/0494/0512

CIRC ACCESSION NO--AP0116654

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0116654
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PACKING FACTOR (K) OF 70 VARIOUS ALIPHATIC AND AROMATIC POLYMERS WAS CALCD. (K EQUALS 0.664-0.697). THE PACKING D. OF VARIOUS AMORPHOUS AND PARTIALLY CRYST. POLYMERS WAS QUITE SIMILAR IN THE 1ST APPROXN. SUBSTITUTION OF POLAR GROUPS FOR NONPOLAR ONES LED TO INCREASED D., PRESUMABLY DUE TO INCREASED MASS RATHER THAN VOL. CONTRACTION. THE D. OF THE POLYMERS WAS CALCD. FROM CHEM. STRUCTURE DATA OF THE REPEATING UNIT, WHICH OFFERED A MEANS FOR PREDICTING THE PROPERTIES OF A POLYMER PRIOR TO SYNTHESIS. ISOMERIC POLYMERS WERE SUBDIVIDED INTO 2 GROUPS, VIZ., ISOMERS HAVING IDENTICAL INTRINSIC VOL, AND ISOMERS HAVING DIFFERENT VOLS. THE LATTER POLYMER HAD MARKEDLY DIFFERENT PROPERTIES. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--HEAT RESISTANCE OF POLYMERS -U-

AUTHOR-(03)-SLONIMSKIY, G.L., ASKADSKIY, A.A., MZHELSKIY, A.I.

COUNTRY OF INFO--USSR 5

SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(5), 1161-79

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL STABILITY, MATHEMATIC EXPRESSION, HEAT RESISTANT PLASTIC, THERMAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1262 STEP NO--UR/0459/70/012/005/1161/1179

CIRC ACCESSION NO--AP0134936

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134936

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HEAT RESISTANCE OF POLYMERS IS DISCUSSED IN QUANT. MATH. TERMS. THE SHAPE CONSTANCY, STRESS DISTRIBUTION, AND STRESS PRESERVATION ARE THE MAIN STABILITY PARAMETERS. EQUATIONS WERE DEDUCED WHICH EXPRESS THE RELATION BETWEEN THESE PARAMETERS AND TEMP. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 -015

UNCLASSIFIED

TITLE--STRUCTURE OF GELATINE GELS -U- PROCESSING DATE--18SEP70

AUTHOR-(03)-SLONIMSKIY, G.L., TOLSTOGUZOV, V.B., IZYUMOV, D.B.

COUNTRY OF INFO--USSR

S

SOURCE--VYSOKOLMOL. SOEDIN., SER. B 1970, 12(2), 160-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GEL, MOLECULAR STRUCTURE, PLASTICITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1199 STEP NO--UR/0460/70/012/002/0160/0165

CIRC ACCESSION NO--AP0104565

UNCLASSIFIED

2/2 --015 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AP0104565

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PLASTICITY OF GELS CONTG. 10PERCENT GELATINE (I) AND 0.2-1.0PERCENT CA ALGINATE (II) WAS MEASURED BY MEANS OF A MODIFIED DYNAMOMETER AT 10-50DEGREES AND A STRESS OF 3700 DYNES-CM PRIME2. THE PLASTICITY OF THE I-II SYSTEM INCREASED IN THE RANGE OF 29-35DEGREES REACHING A MAX. AT 34-8DEGREES, THEN DECLINED, AND AT 42-4DEGREES CORRESPONDED TO THE PLASTICITY OF II GEL OF SIMILAR CONCN. MAX. PLASTICITY OF THE SYSTEM SHIFTED ON COOLING TOWARDS THE LOWER TEMPS. AND WAS A FUNCTION OF THE COOLING RATE. THE ANOMALOUS BEHAVOIR OF I-II GELS WAS ATTRIBUTED TO A BREAKDOWN OF THE SUPRAMOL. STRUCTURE, WHILE THE MAGNITUDE OF THE MAX. WAS A FUNCTION OF MEASUREMENT CONDITIONS.

UNCLASSIFIED

5

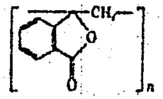
Acc. Nr. AP0048827

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code
UR0459

3

90903k Synthesis and behavior of poly(methylenephthalide). Vinogradova, S. V.; Salazkin, S. N.; Korshak, V. V.; Chelidze, G. Sh.; Slonimskii, G. L.; Askadskii, A. A.; Mzhel'skii, A. I. (Inst. Elementoorg. Soedin., Moscow, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1), 205-13 (Russ). The title polymer (I) was prepd. by bulk, emulsion, and soln. polymn. of methylenephthalide (II) in the presence of peroxides or $BF_3.HCONMe_2$. II was also thermally polymd. in $HCONMe_2$ in air at 60° to give I of higher mol. wt. than I obtained similarly under argon. Increasing the temp. to 80° had no effect on the I yield and viscosity. I with reduced viscosity 0.5-0.7 dl/g (0.5% $HCONMe_2$, 25°) was obtained by soln. polymn. of II in the presence of Bz_2O_2 or $(NH_4)_2S_2O_8$. Soln. polymn. of II was solvent-sensitive. I with



(I)

1/2

REEL/FRAME
19800591

7

AP0048827

max. reduced viscosity (0.85 dl/g) was obtained by polymn. of II in $HCONMe_2$ at 70° in the presence of $BF_3.HCONMe_2$. Increasing the reaction time raised the I yield sharply. II was also bulk copolymd. with other monomers, esp. styrene, acrylonitrile, and Me methacrylate, in the presence of Bz_2O_2 to give high yields of copolymers with high reduced viscosity. All copolymers were solids, sol. in the same solvents (CF_3CO_2H, Me_2SO, etc.) as I. I had softening point 300° and good thermal stability. DBJR

20

7/2

19800592

Acc. Nr: AA0051019

Abstracting Service: CHEMICAL ABST. 5-70

Ref. Code: UK0000

101534u **Plastic antifriction material.** Korshak, V. V.; Vinogradova, S. V.; Slonimskii, G. L.; Gribova, I. A.; Chumaevskaya, A. N.; Krasnov, A. P.; Fomina, Z. Ya.; Askadskii, A. A. (Institute of Heteroorganic Compounds, Academy of Sciences, U.S.S.R.) Brit. 1,179,400 (Cl. C 10m), 28 Jan 1970, Appl. 29 Jun 1967; 3 pp. Antifriction materials with little self-adhesion and low coeff. of friction were prepd. by compression molding polyesters contg. >3% P with 30-70% MoS_2 and powd. Cu fillers. Thus, a 0.5-0.5-1.0 isophthaloyl dichloride-$MePOCl_2$-phenolphthalein mixt. was polycondensed in a chlorinated diphenyl solvent at 220° and 4.0 g of the polyester obtained was blended with 6 g MoS_2 and 4 g powd. Cu for 3-5 min before compression molding at 220-50° and 1000-1500 kg/cm^2. Polyesters contg. P were also prepd. by condensing terephthaloyl chloride with phenolphthalein and p,p'-methylphosphinylidenebis(benzoyl chloride) and were used either alone or were blended with phenolphthalein-phenol-formaldehyde resins.

CQPN

1/1

REEL/FRAME
19811028

7

USSR

UDC 519.2

BODNARCHUK, P. J., PUSTOMEL'NIKOV, J. P., SLON'OVS'KIY, R. V., YAROVIY, S. S.

"Some Applications of Branch Continued Fractions when Studying Markov Processes"

Dopovidi AN URSR (Reports of the Ukrainian SSR Academy of Sciences), 1972, A, No 5, pp 391-394, 475 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V37)

Translation: The distribution components at the time n for the Markov chain with a finite number of states are represented in the form of branched continued fractions. This representation is convenient for calculating such probabilities by computer.

1/1

USSR

UDC 621.74

SIDORIN, I. I., Doctor of Technical Sciences, Professor, SILAYEVA, V. I., Candidate of Technical Sciences, Docent, SLOTIN, V. I., Candidate of Technical Sciences, SOLOV'YEVA, T. V., Candidate of Technical Sciences, Docent, and ESKIN, G. I., Candidate of Technical Sciences, Moscow Higher Technical School imeni N. E. Bauman

"Obtaining a Composite Casting Alloy for Percussive Rock Drills by Means of Ultrasonic Treatment of the Melt"

Moscow, Izvestiya Vysshykh Uchebnykh Zavedeniy, Mashinostroyeniye, No 8, 1972, pp 116-121

Abstract: A composite alloy for cumulative-action percussive rock drills is obtained on the basis of alloy MVTU-3. This alloy has high hardness and strength values, and possesses considerable brittleness and fragmentability. In order to make the alloy still stronger, and to increase its brittleness and fragmentability, refractory carbide particles and oxides, of varied dispersity, were introduced into the alloy in combination with ultrasonic treatment of the molten metal. Best results were obtained with silicon carbide.

1/2

USSR

SIDORIN, I. I., et al., Izvestiya Vysshykh Uchebnykh Zavedeniy, Mashinostroyeniye, No 8, 1972, pp 116-121

As a result of ultrasonic treatment in the molten metal, intensive cavitation processes originate, which bring about dispersion and destruction of the refractory particles; this facilitates wetting of the particles by the base metal, and facilitates their uniform distribution in the composition material. Study of the mechanical properties of compositions of varied content showed that they are determined by the nature of their components, as well as by the quantity and dispersity of the strengthening particles. The properties of the obtained composition alloy in a cast state are presented, before and after ultrasonic treatment. The obtained composition is recommended for the production of cumulative-action percussive rock drill parts operating at high hydrostatic pressures and temperatures of 100-150° C. 1 table. 5 figures. 3 references.

2/2

USSR

SLCTIN, V.V., BUTURLIN, A.I., DUVANOV, G.V., CHISTYAKOV, YU.D. UDC 621.315.592:546.28

"On The Possibility Of Control Of The Composition Of A Vapor-Gas Mixture In The Chloride Process Of Preparing Autoepitaxial Layers Of Silicon By The Method Of Piezoquartz Microweighing With A Sorbing Layer"

Sb. nauch.tr. po probl.mikroelektron. Mosk. in-t elektron.tekhn. (Collection Of Scientific Works On Problems Of Microelectronics. Moscow Institute Of Electronics Technology), 1972, Issue 8, pp 184-192 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 72, Abstract No 9B78)

Translation: The paper considers a statement of the problem of automatization of the control of the composition of a vapor-gas mixture in the chloride process of preparing autoepitaxial layers of Si. Requirements are formulated for methods of control which make it possible to automatize the measurement process. An analysis is made of the possibilities of a method of piezoquartz microweighing with a sorbing layer and the prospects for its use for continuous control of the composition of vapor-gas mixtures are shown. 16 ref. Summary.

1/1

USSR

UDC 621.315.592:546.88

SLOTIN, V.V., BUTURLIN, A.I., DUVANOV, G.V., CHISTYAKOV, YU.D.

"Thermodynamic Analysis Of Hydrolysis Reaction Of Silicon Tetrachloride Vapors"

Sb.nauch.tr. po probl.mikroelektron. Mosk. in-ta elektron.tekhn. (Collection Of Scientific Works On Problems Of Microelectronics). Moscow Institute Of Electronics Technology), 1972, Issue 8, pp 193-199 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 9B81)

Translation: A thermodynamic analysis is made of the hydrolysis reaction of $SiCl_4$. The temperature is determined for preparation of silica gel type products (~60° C). The role is considered of the hydrolysis reaction of $SiCl_4$ vapors in a chloride process for preparation of autoepitaxial layers of Si. 4 ref. Summary.

1/1

USSR

UDC: 658.562.012.7

2

BARYAKH, B. M., GRANBERG, G. Ya., LERNER, I. U., SLOTSNIK, Ya. Yu., TSIV'YAN, B. Kh., CHERNKOV, V. V.

"Device for Centralized Testing of Parameters of an Object"

USSR Author's Certificate Number 308433, filed 16/03/70, published 12/08/71 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 3, 1972, Abstract No 3 A371 P)

Translation: A device is suggested for centralized testing of the parameters of an object, containing a unit for selection of parameters, an autocompensator with a servo system, a rotation-digital converter, a unit for checking the accuracy of the servo system of the autocompensator, a defect indicator, a counter unit, and a recorder. In order to increase the speed and reliability of testing, the device contains a threshold unit connected to the input of the rotation-digital converter and a self-testing unit in the servo system, and the output of the threshold unit is connected to one input of the self-testing unit of the servo system, the second input of which is connected to an additional output of the unit for selection of parameters; the output of the counting control is connected

1/2

USSR

BARYAKH, B. M., GRANBERG, G. Ya., LERNER, I. U., SLOTSNIK, Ya. Yu., TSIV'YAN, B. Kh., CHERNKOV, V. V., USSR Author's Certificate Number 308433, filed 16/03/70, published 12/08/71 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 3, 1972, Abstract No 3 A371 P)

to the input of the counting unit, the output of the false balance checking unit is connected to the controlling input of the servo system balancing element, while the output of the signalling unit is connected to the additional inputs of the defect indicator and recorder. 2 figures.

2/2

UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 015

TITLE--MUTUAL EXCHANGE OF HALIDES IN THE REACTION FO ALPHA
HALOPOLYNITROALKANES WITH METAL HALIDES -U-

AUTHOR-(03)-SLOVETSKIY, V.I., KHISAMUTDINOV, G.KH., FAYNZILBERG, A.A.

S

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 728

DATE PUBLISHED---------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC NITRO COMPOUND, ALKANE, HALOGENATED ORGANIC COMPOUND,
EXCHANGE REACTION, LITHIUM COMPOUND, BROMIDE, LITHIUM CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0746 STEP NO--UR/0062/70/000/003/0728/0728

CIRC ACCESSION NO--AP0124416

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124416

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KEEPING (O SUB2 N)SUB3 CCL WITH LIBR 1 DAY IN ETOH GAVE 55PERCENT (O SUB2 N)SUB3 CBR, WHICH WITH LICL IN ETOH OR DMF SIMILARLY GAVE (O SUB2 N)SUB3 CCL IN 60PERCENT OR 53PERCENT YIELDS, RESP. (O SUB2 N)SUB3 CI AND LICL OR LIBR IN ETOH OR ME SUB2 SO RAPIDLY GAVE (O SUB2 N)SUB3 CCL OR (O SUB2 N)SUB3 CBR, RESP., IN 30-5PERCENT YIELDS. FBRC(NO SUB2)SUB2 AND LICL IN DMF IN 380 HR AT 20DEGREES GAVE FCLC(NO SUB2)SUB2 AND MECBR(NO SUB2)SUB2 GAVE MECCL(NO SUB2)SUB2 IN 720 HR; THE YIELDS WERE 70 AND 43PERCENT, RESP. CONVERSIONS OF THESE WITH LIBR GAVE MUCH LOWER YIELDS. EHNCE THE MECHANISMS OF MANY CLASSICAL REACTIONS OF POLYNITROHALOALKANES MUST BE TREATED FROM A NEW POSITION AS BIMOL NUCLEOPHILIC DISPLACEMENTS AT THE C ATOM. THUS, A SLOW EQUIL. DEVELOPS BETWEEN RC(NO SUB2)SUB2 X AND KI AND KX AND RC(NO SUB2)SUB2 I AND A FAST EQUIL. REACTION BETWEEN THE LATTER AND KI WITH RC(NO SUB2)SUB2 K PLUS I SUB2, TO EXPLAIN THE IODOMETRIC REACTION OF SUCH COMPDS. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 669.292.003

SLOTVINSKIY-SIDAK, N. P., and LYAKISHEV, N. P.

"Some Problems of the Production of Vanadium in the USSR"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 202-205

Translation: Problems involved in the production of vanadium pentoxide abroad and in the USSR, the raw material base of the USSR and the possibility of its utilization for the production of vanadium are discussed. Methods are presented for extracting vanadium from iron ore raw material, and their improvement is considered. Various methods of production of ferrovanadium and alloys with vanadium are studied.

1/1

UDC 612.823.5

USSR

BRYTVAN, Ya. M., VIYEVS'KIY, M. A., KROKHMAL', S. S., MAKAROVA, Z. O., NIKIFOROVA, I. P., POPLAV'SKA, L. I., and SLOVODYANYUK, Chair of Pathological Physiology, Vinnitsa Medical Institute

"Functional Response of Different Sections of the Brain to Extreme Stimuli"

Kiev, Fiziologicheskiy Zhurnal, No 5, 1972, pp 644-653

Abstract: Experiments on cats and rabbits showed that electrical activity of the cortex and subcortex, respiration, and arterial pressure are dependent on the original and present functional state of the nervous system. The effects of prolonged compression of soft tissues, increased intracranial pressure, alcoholic intoxication, asphyxia, blood loss, and various forms of hypertension were studied. Functional shifts were induced by preliminary injection of amphetamine sulfate or chlorpromazine, electrocoagulation of the anterior hypothalamus, and denervation of the sinocarotid and aortic vascular zones. Along with generalized and phasic reactions of electrical activity, cortical-subcortical dissociations occurred with signs of induction of the adjacent regions. A stress rhythm appeared quite often in the diencephalon and brainstem. The onset and course of the experimental pathology and accompanying electrical activity were dependent on both the original and

1/2

3

USSR

BRYTVAN, Ya. M., et al., Fiziologicheskiy Zhurnal, No 5, 1972, pp 644-653

present functional state of the nervous system. The mechanisms of the observed phenomena cannot be ascribed solely to the generalized influence of the reticular formation or to corticofungal impulses. Various neurogenic components are involved and it is through their interaction that the integral reaction of the brain is achieved.

Acc. Nr: AP0047194 Ref. Code: UR0511

PRIMARY SOURCE: Stomatologiya, 1970, Vol 49, Nr 1 , pp 78-79

L. I. Slovokholnova, M. I. Livshits — THE INFLUENCE OF ATROPINE AND PILOCARPINE ON THE DEVELOPMENT OF DENTAL EXPERIMENTAL CARIES IN RATS

Summary. During 55-day-long experiments on albino rats receiving a cariesogenic diet the authors studied the influence of hypo- and hypersalivation on the development of dental caries. It was established that atropine, causing hyposalivation, accelerates the development on dental caries, whereas pilocarpine, causing hypersalivation, manifests a tendency to retention of the development of dental caries.

1/1

DI 2

REEL/FRAME

19790693

USSR

UDC 541.15

SUKHOV, F. F., SLOVOKHOTOVA, N. A., KARGIN (deceased), V. A., Institute of Physical Chemistry imeni L. Ya. Karpov

"The Mechanism of Radiation-Induced Dehydrochlorination of Polyvinylchloride"

Moscow, Khimiya Vysokikh Energiy, Vol 5, No 4, Jul-Aug 71, pp 364-365

Abstract: A very broad band in the infrared spectrum, previously observed during vacuum irradiation of PVC is caused partly by the formation of HCl complexes with oxygen-bearing impurities in the starting polymer. The fact that the 2300 cm^{-1} band does not reach maximum intensity until very high dosages indicates that the polymer is continuing to accumulate some light-quenching particles near this band regardless of the presence of oxygen in them. The fact that part of the absorption in the 2300 cm^{-1} band disappears when the irradiated polymer is heated to 200°K suggests that the particles disappearing at 200°K must have a structure similar to HCl complexes with ethers and carbonyl groups, and further that this disappearance is caused by CH valence oscillations in the carbonium ion $\sim CH_2-\overset{+}{C}H-CH_2 \sim$. Spectral studies confirmed the proposal that the 2300 cm^{-1} band is related to the ion pair

1/2

USSR

SUKHOV, F. F., et al., Khimiya Vysokikh Energiy, Vol 5, No 4, Jul-Aug 71, pp 364-365

$\sim CH_2-\overset{+}{C}H-CH_2\sim ...\overline{Cl}$; PVC and IPC alone (of isopropyl chloride, propyl chloride, tert-butyl chloride and polyvinylidenchloride and PVC) exhibited a broad, intensive band at 2300 cm^{-1}.

2/2

1/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SPECTROSCOPIC STUDY OF THE LOW TEMPERATURE RADIOLYSIS OF SOME
POLYOLEFINS -U-
AUTHOR-(04)-DZHIBGASHVILI, G.G., SLOVOKHOTOVA, N.A., LESHCHENKO, S.S.,
KARPOV, V.L.
5
COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(3), 281-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS

TOPIC TAGS--IR SPECTRUM, RADIOLYSIS, POLYETHYLENE, PROPYLENE, BUTENE,
COPOLYMER, LOW TEMPERATURE EFFECT, CYCLIC STRUCTURE, FREE RADICAL,
POLYMER CROSSLINKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0861 STEP NO--UR/0456/70/004/003/0281/0282

CIRC ACCESSION NO--AP0137889
UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137889

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA WERE STUDIED OF HIGH D. POLYETHELENE, ETHYLENE PROPYLENE COPOLYMER, AND ETHYLENE ALPHA BUTYLENE COPOLYMER, AFTER IRRADN. AT NEGATIVE 180DEGREES. THE APPEARANCE OF NEW IR BANDS OR THE INCREASE IN THE INTENSITY OF SOME OF THE ORIGINAL BANDS SHOWED THAT LOW TEMP., FREE RADICAL CROSSLINKING, FORMATION OF CYCLIC STRUCTURES (CYCLOPENTANES, CYCLOHEXANES), AND FORMATION OF TRANS VINYLENE GROUPS OCCURRED. FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 546.791.4'241

ELLERT, G. V., and SLOVYANSKIKH, V. K., Institute of General and Inorganic Chemistry imeni N. S. Kurnakov, Academy of Sciences USSR

"Uranium Ditelluride"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 17, No 2, Feb 72, pp 574-575

Abstract: UTe_2 was prepared by the sublimation in vacuo of a mixture of U and Te with 90 atom % Te as described by Ellert et al earlier (Zh. Neorgan. Khimii, 16, 1721, 1971). At 630-960° the product formed had a constant composition close to the stoichiometric one corresponding to the formula UTe_2. An X-ray diffraction study of UTe_2 single crystals prepared by chemical transfer with Br_2 from a hot zone at 830° to a cold zone at 800° showed that the compound crystallized in the rhombic system (a = 4.17, b = 6.14, c = 13.97 Å) and not, as reported in the literature on the basis of studies on UTe_2 powder, in the tetragonal system.

1/1

USSR UDC 546.791'221 + 546.791'231

SEVAST'YANOV, V. G., ELLERT, G. V., and SLOVYANSKIKH, V. K., Institute of General and Inorganic Chemistry imeni N. S. Kurnakov, Academy of Sciences USSR

"Chemical Transfer of Uranium Sulfides and Selenides"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 17, No 1, Jan 72, pp 16-19

Abstract: Using the methods of chemical transport reactions, monocrystals of uranium sulfides and selenides were obtained. The yield of these reactions was studied as a function of initial bromine concentration, as the difference between the hot and cold zones, and, in case of uranium selenide, on the composition of starting selenide, while with the uranium sulfide - on the square of the ampule diameter. The temperature zones were 930° (t_{hot}) and 830° (t_{cold}), the ampule was 16 cm long, the starting sulfide had the formula $US_{1.5}$, and the initial concentration of bromine was 0.4 mg/cm^3. The rate of uranium sulfide transfer depends onthe diffusion of gasseous reaction products. In the experiment on the dependence of uranium sulfide crystals on the initial concentration of bromine it was shown that when the starting material was $US_{1.5}$, the U_3S_5 crystals grew throughout the entire range of bromine concentration; with $US_{1.8}$

1/2

USSR

SEVAST'YANOV, V. G., et al., Zhurnal Neorganicheskoy Khimii, Vol 17, No 1, Jan 72, pp 16-19

at the starting point, the $US_{1.87}$ and β-US_2 crystals grew in the concentration ranges 0-0.4 and 0.4-1.2 mg/cm^3 Br respectively, while the increase of bromine concentration to more than 1.2 mg/cm^3 leads to the formation of β-US_2 and UOS mixtures. When the difference between the zone was plotted against the yield of the product, it was found that $US_{1.87}$ increases linearly with the difference, and U_3S_5 goes through a maximum at 200° down to 0 yield at 400° difference between the hot and cold zones. Both phenomena are ascribed to the increase in the difference of partial pressures of gaseous phase components. When U_3Se_5 yield was studied as a function of the composition of starting material 2- the curve showed a complex pattern: depending on the starting material the products changed from U_3Se_5 through $USe_{1.87}$, α-USe_2, β-USe_2 to USe_3.

2/2

Acc. Nr: AP0038030 S Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 80-84

MAGNETIC PROPERTIES OF URANIUM AND THORIUM COMPOUNDS CONTAINING IRON, NICKEL OR COBALT

Chechernikov, V. I.; Pletyushkin, V. A.; Shavishvili, T. M.; Slovyanskikh, V. K.

The magnetic susceptibility has been measured for the following actinoid compounds with 3*d*-metals: UFe_2, UCo_2, UNi_5, ThNi, $ThNi_5$, $ThCo_5$. Compounds which are isomorphic with respect to their crystal structure are found to possess different magnetic properties. Thus UFe_2 and $ThCo_5$ are ferromagnetic substances whereas UCo_2 and $ThNi_5$ are temperature-independent paramagnetic substances. The rigid band model is employed for interpreting the results obtained.

1/1

REEL/FRAME
19731071

21

USSR

UDC 541.64:543.872

DAVANKOV, A. B. (deceased), LEYKIN, Yu. A., SMIRNOV, A. V., SLOZHENIKINA, T. Ya., and KORSHAK, V. V., Moscow Chemical Technological Institute imeni D. I. Mendeleyev

"Investigation of the Thermooxidative Destruction Processes of Some Phosphorus Containing Ion Exchange Resins"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 15, No 11, Nov 73, pp 2446-2452

Abstract: Some phosphorus-containing cationic and amphoteric ion exchange resins were studied by means of thermal analysis. The mechanism of decomposition of phosphorus containing ionogenic groups has been investigated by a combination of thermal analysis, IR-spectroscopy, potentiometric titration, paper chromatography and elemental analysis data of the dry residue of the pyralytic products. It was established that the amphoteric ion exchange resin decomposes by a mixed mechanism including reactions of free phosphonic and phosphonous acid groups in the intralayer form.

1/1

SLUCHANKO, I.S.

health statistics

JPRS 56177
6 Jun 72
UDC: 614.1:31

INTEGRATION OF HEALTH STATISTICS WITH SOCIAL, DEMOGRAPHIC AND ECONOMIC STATISTICS (MEETING OF THE UN EUROPEAN ECONOMIC COMMISSION)

[Article by I.S. Sluchanko, A.P. Medvedeva (Moscow); Moscow, Sovetskoye Zdravookhraneniye, Russian, No 4, 1972, pp 86-88]

A joint meeting of the WHO European Regional Office and UN Statistical and Economic Commission for Europe convened in Geneva, in April 1971. The chief purpose of the meeting was to consider the place of health care and health statistics in social and economic statistics, to consider the possibility of including health indices and characteristics in the system of national accounting. The meeting was called upon to consider what health and health care indices were needed for this purpose, the methods of obtaining them, and to determine whether such indices were comparable between nations and to other statistics systems.

There were 50 representatives from 24 countries at the meeting. The USSR was represented by A.P. Medvedeva (Central Statistical Administration) and I.S. Sluchanko (Central Institute for Advanced Training of Physicians).

The main issues on the agenda were: 1) Public health statistics (definition of terms, classifications; criteria of health and illness). 2) Integration of public health statistics in the system of demographic and social statistics. 3) Integration of public health statistics in the system of national economy accounting.

With reference to the first item, the report of Mr. Doleyshi who spoke on behalf of the WHO European Regional Bureau was discussed. The author dealt with the main indices and terms that are used to describe health (morbidity rate, distribution, overall, child, and age-related death rates). Little was said about physical development and disability. Morbidity involving temporary disability occupied a significant place. He indicated the existing and proposed classifications of disease and causes of death, surgical operations, specialties, institutions, etc. There was brief discussion of indices of work of medical institutions.

SLUCHANKO, I. S.

JPRS 55570

29 Mar 72

UDC: 362.11.007.4:658.351

INVESTIGATION OF WORK SCHEDULE OF HOSPITAL ATTENDANTS IN CLINICAL DEPARTMENTS OF HOSPITALS (BASED ON DATA FOR THE MUNICIPAL CLINICAL HOSPITAL IMENI S.P. BOTKIN, MOSCOW)

[Article by I.S. Sluchanko, Z.V. Preobrazhenskaya, Ye.K. Golitsyna, T.I. Yevgra-
fova; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 2, 1972, submitted
12 August 1971, pp 31-34]

Researchers are devoting more and more attention to organization of
work of medical personnel. Studies are made of the work of doctors and nurses
in polyclinics and hospitals. Yet we failed to encounter data in the litera-
ture dealing with analysis of the work done by male and female hospital
attendants. The hiring and training of such workers as well as organization
of their work are urgent problems in modern public health.

At the request of the public health commission of the Moscow Council
of Workers' Deputies, in July and August 1970 we made a study of the training
of female hospital attendants, their availability in a clinical institution,
their activities, schedule of work time, existing system of organizing their
work, for the purpose of rationalizing it. This investigation was conducted
using a method developed and used in the department of scientific organiza-
tion of labor of the All-Union Scientific Research Institute of Social Hygiene
and Public Health Organization imeni N.A. Semashko as it applies to the
objectives and tasks set before us. Specially trained nurses designated
by the administration of the Hospital imeni S.P. Botkin clocked the work
done by the female attendants. The work of these attendants at each work
place was studied around the clock for six days by the method of photograph-
ing work time and clocking. The material was processed statistically using
variation statistics methods. Two therapeutic, two surgical, one neurological,
and one neurosurgical department were selected for the study. We investigated
the work of 19 attendants [female] including seven in the therapeutic depart-
ments, five in the surgical ones, three in the neurosurgical, and four in the
neurological department.

The attendants studied ranged in age from 37 to 75 years, over 50 per-
cent of them were 50-60 years of age and about 25 percent over 60 years old.

USSR

UDC 539.23:621.52:621.646.2

SLUTSKAYA, V.V.

"Electrically Controlled Modulator-Attenuator At Microwave Frequencies (Short Report)"

Elektrosvyaz', No 9, Sept 1972, p 16

Abstract: The report discusses a technology devised for production of ferrite modulator-attenuators at wavelengths of 3 cm and 1.5 cm and the study made of the specimens prepared. The devices described can be used: 1) For rapid switching of microwave energy with a non-critical value of the controlling magnetic field; 2) For automatic stabilization of the amplitude in FM oscillators; 3) For gain stabilization of parametric amplifiers; and 4) For shaping of microwave energy pulses and rapid switching of transmitter-receivers. 1 fig. 1 ref. Received by editors, 30 Aug 1971.

1/1

USSR

UDC 621.643.411.4.001.5

SHOSTAK, I. A. and GAPCHENKO, M. N., Kiev Polytechnical Institute;
SLUCHANKO, N. A. and ABERKOV, A. S., Soyuzmontazhgaz [expansion unknown] Trust

"Welding Repeated Butt Joints in Thick-Wall Pipe With a Strip Electrode"

Moscow, Stroitel'stvo Truboprovodov, No 4, Apr 73, pp 21-23

Abstract: Experiments were conducted at the industrial base of the Soyuzmontazhgaz Trust on making butt welds of thick-wall pipe using a strip electrode. Annular welds were made on pipe measuring 426 x 30 mm and 1020 x 17 mm. Cold-rolled strip made from killed steel 08kp measuring 0.8 mm thick and 15 mm wide. Fluxes AN-348A and KVS-19 were used. The weld seams were subjected to mechanical testing after welding with the results compared with mechanical tests of seams of steel 15G2S, welded under ceramic fluxes. Weld seams made using flux KVS-19 had better tensile, yield and impact (+20 C) strengths than those welded using flux AN-348A while impact strengths at -40 C were equal. However, the mechanical properties of seams welded from steel 08kp under either flux were better than weld seams of steel 15G2S pipe.

1/1

USSR

UDC: None

GEZALOV, M. A., KUKSENKO, V. S., and SLUTSKER, A. I.

"Kinetics of the Formation of Submicroscopic Cracks in Polymers Under Load"

Leningrad, Fizika Tverdogo Tela, vol 14, No 2, 1972, pp 413-416

Abstract: A description is given of experiments performed by the authors to determine how the formation of submicroscopic cracks in polymers under various stresses and temperatures varies. In these experiments, the specimen was kept at constant temperature and was placed in a small-angled x-ray diffractometer. It was subjected to a load increasing uniformly with time, and the intensity of the diffusion dispersion was measured. To exclude factors complicating the kinetics of the crack formation, the measurements were made at the initial portions of the curves for the accumulation of the cracks, at which the complications are minimal. Curves are given for the accumulation of cracks in capron as a function of the stress and the temperature. From these curves, the authors find a connection between the processes of crack formation and the destruction or life expectancy of the specimen. They express their gratitude to S. N. Zhurkov for his comments and are associated with the A. F. Ioffe Physicotechnical Institute.

USSR

GEZALOV, M. A.; KUKSENKO, V. S.; SLUTSKER, A. I. (Joffe Physics-Engineering Institute, USSR Academy of Sciences, Leningrad)

"Formation of Submicroscopic Cracks in Stressed Polymers at Various Temperatures"

Leningrad, Fizika Tverdogo Tela; February, 1971; pp 445-9

ABSTRACT: A method of small-angle X-ray diffraction was used to study the laws governing the formation of submicrocracks under stress along the orientation axis of crystalline polymers (polycaproamide, polypropylene) at various temperatures (from +20° to -70°C). The equipment used allowed direct stress of the samples in the vacuum chamber of a small-angle diffractometer in the temperature range of +100° to -150°C. The appearance of small-angle diffusion scattering served as an indicator of the occurence of submicrocracks. The dimensions and concentration of the submicrocracks were determined by the angle of intensive diffusion scattering in different directions and the absolute magnitude of the intensity respectively.

1/2

USSR

GEZALOV, M. A., et al, Fizika Tverdogo Tela; February, 1971; pp 445-9

The fibrillar type of supermolecular structure is characteristic of the oriented state. It appeared that the transverse dimensions of the submicrocracks (perpendicular to the axis of stress) do not vary with a change in the stress temperature and are the same in magnitude as the transverse dimension of the fibril. Thus, the process of destruction of the polymer appears to be closely connected with its supermolecular structure. The longitudinal dimensions of the submicrocracks decrease with a decrease in the stress temperature, which is connected with a decrease in the deformability of the polymer. The concentration of submicrocracks in the prestressed state decreases monotonically with a decrease in the temperature of the samples during the test. On the basis of this, the conclusion is drawn that the observation of submicrocracks in many cases is not limited by the absence of submicrocrack formation itself but is related to the fact that the concentrations and dimensions of the submicrocracks are comparatively small and can not be recorded by present techniques of X-ray measurement.

2/2

- END -

6022
CSO: 1862-W

1/2 033 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STRENGTH OF NEEDLE SHAPED SINGLE CRYSTALS OF POLY,OXYMETHYLENE -U-

AUTHOR-(02)-RYSKIN, V.S., SLUTSKER, A.I.

COUNTRY OF INFO--USSR

SOURCE--MEKH. POLIM: 1970, 6(2), 266-70

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SINGLE CRYSTAL, TRIOXANE, POLYMERIZATION, TENSILE STRENGTH, POLYOXYMETHYLENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605014/B03 STEP NO--UR/0374/70/006/002/0266/0270

CIRC ACCESSION NO--AP0140446

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 033

CIRC ACCESSION NO--AP0140446

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHYS. TESTS OF POLY(OXYMETHYLENE) NEEDLELIKE SINGLE CRYSTALS ("WHISKERS"), OBTAINED BY DIRECTED POLYMN OF TRIOXANE IN THE PRESENCE OF BF SUB3 OR SNCL SUB4, SHOWED THAT THEY HAVE HIGH TENSILE STRENGTH (200-350 KG-CM PRIME2) AND RIGIDITY.

FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

1/2 041 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--FORMATION OF SUBMICROSCOPIC CRACKS IN POLYMERS UNDER THE INFLUENCE
OF CYCLIC LOADING -U-
AUTHOR-(02)-KNOPOV, V.M., SLUTSKER, A.I.

S

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1176-80

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--X RAY DIFFRACTION, POLYAMIDE RESIN, POLYPROPYLENE, PLASTIC
FILM, CRACK PROPAGATION, CYCLIC STRESS, VIBRATION STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0962 STEP NO--UR/0181/70/012/004/1176/1180

CIRC ACCESSION NO--AP0136392
UNCLASSIFIED

2/2 041 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136392

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SMALL ANGLE X RAY DIFFRACTION WAS USED TO STUDY THE FORMATION OF SUBMICROSCOPIC CRACKS IN POLYCAPROAMIDE AND POLYPROPYLENE FILMS. THE RATE OF THE CRACK CONCN. INCREASE WAS FASTER WHEN CYCLIC, RATHER THAN CONST. STRESS WAS APPLIED. THE CRACKS FORMED UNDER THE CYCLIC STRESS HAD GREATER STABILITY. THE VIBRATIONAL STRESS WAS MORE DESTRUCTIVE FOR POLYMERS THAN THE STATIONARY STRESS. FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--RELATION BETWEEN BREAKDOWN AND DEFORMATION IN ORIENTED POLYMERS -U-

AUTHOR-(02)-KUKSENKO, V.S., SLUTSKER, A.I.

S

COUNTRY OF INFO--USSR

SOURCE--MEKH. POLIM. 1970, 6(1) 43-7

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ELONGATION, NYLON, POLYPROPYLENE, POLYMER DEGRADATION, X RAY
DIFFRACTION STUDY, TENSILE STRENGTH, POLYMER PHYSICAL PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0328 STEP NO--UR/0374/70/006/001/0043/0047

CIRC ACCESSION NO--AP0111522
UNCLASSIFIED

2/2 029

UNCLASSIFIED

CIRC ACCESSION NO--AP0111522 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELONGATION OF THE ORIENTED POLYMERS (NYLON 6, POLYPROPYLENE, ETC.) CAUSES THE APPEARANCE OF MICROFISSURES WHICH WERE DETECTED BY LOW ANGLE X RAY DIFFRACTOMETRY. THE RELEASE OF TENSION CLOSES THE FISSURES BUT DOES NOT SEAL THEM AS SHOWN BOTH BY X RAY DIFFRACTOGRAMS AND BY THE DIFFERENCES BETWEEN THE STRESS STRAIN CURVES OBTAINED AFTER THE 1ST AND AFTER THE SUBSEQUENT ELONGATIONS. THE FAILURE OF THESE POLYMERS DEPENDS ON ORIENTATION AND THE NO. OF FISSURES PER UNIT VOL. ABOUT 10 KG-MM PRIME2 OF THE TENSILE STRENGTH IS RELATED TO THE RELATIVE MOTION (PSEUDORHEOL. FLOW) OF POLYMER CHAINS IN THE ABSENCE OF MICROFISSURES.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 039

TITLE--MEASUREMENT OF IONOSPHERIC PARAMETERS FROM THE DOPPLER AND FARADAY EFFECTS OF COHERENT SIGNALS FROM GEOPHYSICAL ROCKETS RECORDED AT WIDELY

AUTHOR-(05)-MISYURA, V.A., KROKHMALNIKOV, YE.B., ZINCHENKO, G.N., FIRSAKOV, A.S., SLUISKER, S.M.

5

COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIIA, VOL. 10, NO. 2, 1970, P. 244-249

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, MISSILE TECHNOLOGY

TOPIC TAGS--GEOPHYSIC ROCKET, VERTICAL PROFILE, IONOSPHERE, IONOSPHERIC STATION, ELECTRON DENSITY, DOPPLER EFFECT, FARADAY EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0203/70/010/002/0244/0429

PROXY REEL/FRAME--1997/0145

CIRC ACCESSION NO--AP0119141

UNCLASSIFIED

2/2 039 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0119141
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLICATION OF A DIVERSITY RECEPTION TECHNIQUE TO THE DETERMINATION OF VERTICAL ELECTRON CONCENTRATION PROFILES, HORIZONTAL GRADIENTS, AND THE INTEGRAL ELECTRON CONTENT IN A VERTICAL IONOSPHERIC COLUMN AT HEIGHTS ON THE ORDER OF 500 KM. THE PARAMETERS OBTAINED ARE COMPARED WITH SIMULTANEOUS IONOSPHERIC SOUNDING DATA OBTAINED AT SEVERAL IONOSPHERIC STATIONS LOCATED AT DIFFERENT POINTS AROUND THE LAUNCHING SITE.

UNCLASSIFIED

Acc. Nr: AP0043641

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 3, pp 1098-1112

SOME FEATURES OF KINETIC PHENOMENA IN METALS UNDER MAGNETIC BREAKDOWN CONDITIONS

A. A. Slutskin

The influence of magnetic breakdown on the electron kinetics of metals is considered for the case when the spread of the energy levels is much smaller than the characteristic distance between them. A general method is proposed for calculating arbitrary kinetic coefficients; the method yields closed analytic expressions for the coefficients. It is shown that in the case under consideration multiple coherent electron scattering by magnetic breakdown regions in momentum space is appreciable not only for the oscillating (with respect to magnetic field) but also for the smooth part of the kinetic coefficients. General properties of resonance and galvanomagnetic phenomena

1/2

REEL/FRAME
19770043

21

AP0043641

are investigated, and for some types of Fermi surfaces giant magneto — resistance oscillations are predicted. It is shown that the «magnetic breakdown» energy spectrum, which in a certain sense is «accidental», is unstable with respect to weak external fields which induce stochastic motion of electrons, even when the fields possess a regular structure (e.g. the field of an ultrasound wave). «Giant» nonlinear interaction effects between an ultrasound wave and direct electric current and other nonlinear effects are predicted.

2/2

19770044

USSR

UDC 621.52:533.59:621.384.8:329.19

SLUTSKIY, M. Ye. [Spets. konstr. byuro analitich priborostr. AN SSSR -- Special Design Bureau for Analytical Instrument Building, Academy of Sciences USSR]

"Dismantling Device for Opening Closed Containers in a Vacuum"

USSR Author's Certificate No 286335, filed 1 Nov 68, published 18 Jan 71 (from RZh--Elektronika i yeye primeneniye, No 11, Nov 1971, Abstract No 11A120P)

Translation: A dismantling device is proposed for opening closed containers in a vacuum which can be used during mass-spectroscopic investigations on rockets, earth satellites, and cosmic objects. The proposed device differs in that the trigger mechanism is made in the form of a symmetrical lever located directly on the axis of a cylindrical striker, while for retention of the striker in a raised position the latter has a shaft of noncylindrical cross section and the lever is provided with an opening of analogous form. This makes it possible to simplify the construction to reduce the release force, and to increase the reliability of the device, both under ordinary conditions and under conditions of great mechanical overload. R. Sh.

1/1

USSR

UDC: 621.373.001.24:621.372.413

VINOGRADOV, G. I., KREYNOVICH, Ya. R., RADETSKIY, M. N., SLUTSKIY, P. G.,
SHERAYZIN, A. K., CHISTYAKOV, V. A.

"A Device for Tuning Resonant Circuits"

USSR Author's Certificate No 280579, filed 5 Jan 67, published 17 Nov 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D384 P)

Translation: A device is proposed for tuning resonant circuits such as cavity circuits. The device contains a two-armed lever connected by a rod to the tuning element of the circuit to be adjusted, and resting on the cams of a discrete controlling mechanism. To improve the operating precision of the device, the two-armed lever is made in the form of a yoke equipped with regulating screws and connected to a set of levers whose spring-loaded shanks rest on the cams of the control mechanism. Two illustrations. V. P.

1/1

SLUTSKIY, V.I.

SO: JPRS 55015
25 JAN 1972

UDC: 614.4(-32):65

DEVELOPMENT OF AN AUTOMATED SYSTEM OF MANAGEMENT OF URBAN EPIDEMIOLOGICAL SERVICE

(Public Health)

[Article by V.V. Bessonenko, M.N. Tsinker, V.I. Slutskiy, N.A. Osintseva, Novokuznetsk Municipal Health Department (headed by V.V. Bessonenko) and Chair of Social Hygiene and Public Health Organization (headed by M.N. Tsinker, candidate of medical sciences), Novokuznetsk Institute for the Advanced Training of Physicians (vice-chancellor: Professor G.L. Starkov); Moscow, Sovetskoye Zdravookhraneniye, Russian, No 12, 1971, submitted 4 May 1971, pp 42-45]

Epidemic control work and, in particular, control of intestinal infections occupies a special place in the public health system. For prompt and complete detection and decontamination of the source of infection, establishment and neutralization of means of transmission of the pathogen, public health organizers must concentrate maximum attention on development of new and more effective methods in medical service work.

In 1969, the Novokuznetsk Municipal Health Department determined to optimize the information system with respect to incidence of intestinal infections. Under the supervision of V.I. Slutskiy, candidate of medical sciences and senior instructor at the Novokuznetsk Institute for the Advanced Training of Physicians, new approaches have been developed for investigation of the epidemic process and organization of supply of information at different levels of management. Prototypes of epidemiological examination cards have been created which permit gathering fuller and more objective information. A change in the method of gathering information involving mandatory interview with the patient himself while in the hospital by a specially assigned assistant to the epidemiologist, made it possible to obtain important information pertaining to the probable circumstances involved in the infection.

The results of sanitary-bacteriological examination of environmental objects are recorded in a formal document. This document facilitates quantitative evaluation of the degree of contamination which is of great interest for correlation analysis.

All information pertaining to intestinal infections is concentrated in a specially created service, the laboratory of epidemiological analysis, to which it is forwarded by teletype. The information gathered in the form of

public health

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--TRANSMITTANCE AT THE NAUGARZAN ASTRONOMICAL STATION -U-

AUTHOR-(02)-KARDOPOLOV, V.I., SLUTSKIY, V.YE.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK UZBEKSKOI SSR, IZVESTIIA, SERIIA FIZIKO MATEMATICHESKIKH NAUK, VOL. 14, NO. 1, 1970, P. 62-64

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--ASTRONOMIC OBSERVATORY, SPECTRAL DISTRIBUTION, MARS PLANET, LIGHT TRANSMISSION, PARTICLE SCATTER/(U)NAUGARZAN ASTRONOMICAL STATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1254 STEP NO--UR/0166/70/014/001/0062/0064

CIRC ACCESSION NO--AP0124905

UNCLASSIFIED

2/2 026

CIRC ACCESSION NO--AP0124905 UNCLASSIFIED PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DETERMINATION OF THE SPECTRAL TRANSMITTANCE COEFFICIENTS AT NAUGARZAN BY BOUGUER'S METHOD FROM THE SPECTRA OF MARS AND ALPHA BOO PHOTOGRAPHED AT ZENITH DISTANCES RANGING FROM 35 TO 85DEGREES. THE EQUIPMENT USED IN THE EXPERIMENTS IS DESCRIBED. THE PRESENCE OF LARGE PARTICLES IS DETECTED, AND IT IS SHOWN THAT NEUTRAL SCATTERING ON THE LARGE PARTICLES IS FOUR TO FIVE TIMES THE SELECTIVE SCATTERING ON SMALL PARTICLES. THE CURVE OF THE MEAN TRANSMITTANCE COEFFICIENT VS WAVELENGTH FOR NAUGARZAN IS SIMILAR TO THAT FOR MOUNT WHITNEY. FACILITY: AKADEMIIA NAUK UZBEKSKOI SSR, ASTRONOMICHESKII INSTITUT, TASHKENT, UZBEK SSR.

UNCLASSIFIED

USSR

KOZLOV, Ye. A. and SLUTSKOVSKIY, A. I. UDC: None

"A Means of Identifying Multiple Waves in Seismic Prospecting"

Moscow, Otkrytiya. izobreteniya, promyshlennyye obrastsy, tovarnye znaki, No 4, 1973, p 105, No 363949

Abstract: Use is made here of the general deep point method, distinguished by the determination of the velocity and inclination angle of small boundaries to predict the expansion point of the multiple waves. The efficiency of the procedure is thus improved.

1/1

USSR

UDC: 550.834

REMIZOV, V. Ya., GORBUNOV, S. G., SLUTSKOVSKIY, A. I., All-Union Scientific Research Institute of Geophysical Prospecting Methods

"A Device for Recording Seismic Profiles"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 23, Aug 72, Author's Certificate No 346695, Division G, filed 20 Aug 71, published 28 Jul 72, p 188

Translation: This Author's Certificate introduces a device for recording seismic profiles in the form of triangles and trapezoids. The device contains a seismic signal source, an optimizer, a kipp oscillator, a source of high-frequency oscillations, a limiter amplifier, and a cathode ray tube. As a distinguishing feature of the patent, in order to improve the quality of recordings, the seismic signal source is connected to a memory cell which fixes the extremum value of a signal, the output of the integrator [sic] is connected to one of the inputs of a compensation module and to one of the inputs of an amplitude modulator whose other input is connected to the source of high-frequency oscillations, and the outputs of modulator and memory cell are connected through the limiter amplifier to the second input of the compensation module.

1/1

USSR

SLUTSKOVSKIY, A. I., VASIK, A. I., NIKIFOROV, S. V., BEREZA, G. V. UDC: 550.834

"A Device for Recording Seismic Time Profiles in the Form of Triangles and Trapezoids"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, Mar 72, Author's Certificate No 330410, Division G, filed 10 Nov 69, published 24 Feb 72, p 143

Translation: This Author's Certificate introduces: 1. A device for recording seismic time profiles in the form of triangles and trapezoids. The device contains an optimizer, a modulator and a scanning system. As a distinguishing feature of the patent, the effectiveness of processing seismic data is improved by connecting high-frequency square-wave sources through integrating circuits and amplifiers to the inputs of the balanced modulator whose output is connected through an amplifier to a diode bilateral clipper with controllable threshold. The second input of the clipper is connected to a pulse amplifier of extremum values of seismic signals, and the clipper output is connected through an amplifier and half-wave rectifier to the amplifier of the vertical deflecting system of a cathode ray tube. 2. A modi-

1/2

USSR

SLUTSKOVSKIY, A. I. et al., USSR Author's Certificate No 330410

fication of this device distinguished by the fact that the stability of scanning triangular and trapezoidal images on the screen of the CRT is improved by connecting the high-frequency square-wave source with twice the frequency of the low-frequency sources through a differentiating circuit to the controlling input of a switch connected in parallel with the input of an amplifier and a capacitor. The capacitor is connected through a resistor to a DC voltage source, and the output of the amplifier is connected to the horizontal deflecting system of the cathode ray tube.

2/2

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CALCULATING THE THERMODYNAMIC PROPERTIES OF FREONS -U-

AUTHOR-(02)-NGUYEN, A.H., SLYNKO, A.G.

COUNTRY OF INFO--USSR

SOURCE--KNOLOD. TEKH. 1970, 46(12), 24-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMODYNAMIC CHARACTERISTIC, FREON, CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2012 STEP NO--UR/0066/70/046/012/0024/0028

CIRC ACCESSION NO--AP0125600

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0125600
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SIMPLE AND RELATIVELY ACCURATE
METHOD IS PROPOSED FOR CALCG. THE THERMODYNAMIC PROPERTIES OF FREONS FOR
ENGINEERING PURPOSES. FACILITY: ODESS. INST. INZH. MORSK. FLOTA,
ODESSA, USSR.

UNCLASSIFIED

Publications

USSR

[redacted] UDC 543.257.5:576.7

Osnovy Nizkochastotnoy Konduktometrii v Biologii (Fundamentals of Low Frequency Conductometry in Biology), Moscow, Nauka Press, 1972, 131 pp

Translation: This book contains a discussion of the problems of theory and practice of utilizing conductometric methods in biology and also the results of research by the author in the indicated field.

On the basis of analyzing a large amount of experimental data, practical recommendations have been made with respect to the construction of the methods of measuring electrical conductivity of biological structures. Examples of their instrument implementation are presented.

The book is designed for biologists, doctors and medical instrument-making engineers and technicians.

The bibliography has 196 entries, there are 16 tables and 50 figures.

Foreword

1/14

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

In recent years, quantitative methods of analyzing the processes taking place in living tissue and the organism as a whole have received broader and broader development in the practice of biological and medical research. This, in turn, has given rise to the necessity for using the principles of metrology for all types of the corresponding measurements to improve their accuracy and the reliability of the results.

The book by P. P. Slyn'ko, Osnovy Nizkochastotnoy Konduktometrii v Biologii (Fundamentals of Low Frequency Conductometry in Biology) reflects primarily the modern trend toward the broad transition from qualitative to quantitative estimates of the indexes of the functioning of animate organisms.

In the first chapter the author classifies the existing concepts of the role of electrical conductivity of living tissue in sufficient detail in a general evaluation of its functional state, the methods of measuring it and the factors of the external and internal environment affecting its value.

In the second, third and fourth chapters the object of the measurements, the problems of the instrumentation required for the methods of measuring the

2/14

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

electrical conductivity of the tissue, the problems of the effect of external and internal factors on the measurement results and also new methods of research and the corresponding instruments proposed by the author are described successively.

Inasmuch as the book is designed for initial familiarization of a broad class of readers with the fundamentals of the problem touched on, the author strives for maximum clarity and simplicity of the discussion with specific examples.

The concluding chapters of the book contain a sufficiently large amount of experimental data and a critical evaluation of the methods of conductometry. It must be noted that certain principles and propositions advanced by the author are of a discussion nature and require additional confirmation on the basis of careful laboratory and clinical research.

The attention which has been given in the book to the problems of gathering data and the methods of constructing conductometric electrodes and sensors is entirely justified inasmuch as many of the latest projects demonstrate that basic errors have been introduced into the measurement results here.

3/14

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

The clarification of certain physical-chemical and technical problems in the book is designed for specialists, doctors and biologists not having special training in these fields of knowledge.

The book will also be useful to the engineering and technical workers on the level of general familiarization with the medical-biological aspects of the problems touched on and a more efficient approach to the development and construction of conductometric equipment. -- By Professor I. T. Akulinichev

Introduction

Conductometry is the field of electrical conductivity of electrolytes, procedures and instruments for measuring this electrical conductivity and factors affecting its magnitude.

The study of human reactions by electrometric means was initiated at the end of the 19th Century by the Soviet physiologist I. R. Tarkhanov. At the
4/14

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

present time conductometry has received broad development in various fields of biology and medicine.

Living tissue basically consists of bound and free electrolyte solutions which are complex with respect to chemical composition, the concentration of which can vary within defined limits under various effects of the external environment. By recording the electrical conductivity of the tissue, it is possible to judge the change in its functional state or the state of the entire organism under the effect of stimuli.

However, the complexity of the structure and the functions of the cellular and noncellular formations of living tissues, nonuniform distribution of water and chemicals in them not only greatly complicate the concept of transmission of the electric current through a biological conductor, but also increase the requirements on the methods of measuring the electrical parameters of conductors of this type.

The electrical conductivity of living tissues can be measured by contact and contactless methods.
5/14

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

In contact potentiometric and bridge methods, direct and alternating current of low and high frequency can be used, and in contactless methods, only high frequency current. As a result, the methods of biological conductometry can be subdivided into low-frequency and high-frequency methods. The high-frequency methods using frequencies above 25-30 kilohertz are technically equipped with standardized apparatus and they are theoretically better founded than the methods of low-frequency conductometry. Until recently, there were no series-produced low-frequency instruments with the required accuracy, and researchers were forced to work on devices of their own design. Only in recent years have individual developments appeared (Akulinichev, Bayevskiy, 1964; Utyamyshev, 1969) which are of interest for introduction of medical-biological research in practice.

The field of low-frequency conductometry is the least investigated part of electrophysiology, since the generally accepted requirements on electrometering instruments, the designs of sensors for recording the electrical conductivity of the biological tissues, the cutaneogalvanic reflex, perspiration, permeability, intensity of perspiration, and so on have still not been developed. There

6/14

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

are still no generally accepted concepts of the methods of creation and maintenance of constancy of the characteristics of the contact between sensors and tissues and also the nature of the inverse effect of the sensors on the tissue function.

Electrodermography, which studies the electrical characteristics of the skin, has been in the most complex situation. Individual efforts made to equip this field of electrometry with the required apparatus have not produced the expected effect. The primary cause for the failures was insufficiently complete representation of the skin as a conductor of electric current, incomplete representation of the procedures for maintaining a reliable contact between the sensors and the skin, and the complex relationship of the measurement techniques and the functioning of the skin. As an example we have the rheodermatometer built by the Krasnogvardeyets Plant, the instrument for finding acupuncture points (NTA-I), complex diagnostic devices (KDU-1 and 2), the Electrodermatometer, and so on taken from production.

As a result of the external simplicity of the conductometric sensors (for example, electrodes for measuring the electrical conductivity of the skin), when

7/14

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

developing the instruments primary attention obviously was concentrated on their electric circuits, and less significance was attached to the bases for applying sensors of the selected design. This has led to a great scattering of the data obtained and nonreproducibility of the research results.

At this time an effort has been made to explain the basic problems of theory and practice of low-frequency conductometry in biology, to estimate the objectivity of certain known methods, to provide a basis and describe individual new procedures and sensors for physiological research.

The book is intended for biologists and doctors using the methods of conductometry to study the properties of living tissues and the reaction of the organism to external stimuli and also for engineering-technical workers dealing with the development, manufacture and operation of conductometric medical-biological equipment.

The bibliography data do not claim exhaustive completeness and are used as required to obtain a representation of the state of the art.
8/14

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

Contents

Page

Foreword 5

Introduction 7

Chapter 1. General Information About Electrical Conductivity of Biological Tissues........................

1. Methods of Recording Electrical Conductivity of the Skin and Their Practical Utilization 9
2. Electrical Conductivity of Living Tissues 14
3. Basic Anatomohistologic Data on Human Skin........................ 20
4. Structure of the Perspiration Apparatus and Its Innervation. 23
5. Saturation of Various Layers of the Epidermis With Moisture. 25
6. Electrochemical Nature of the Phenomenon of Electrical Polarization of Electrodes 26
7. Practical Conclusions 35

Chapter 2. Means of Measuring the Electroconductivity of Living Tissue 37

1. Living Tissue -- a Complex Conductor of Electric Current.... 37
2. Schemes for Measuring the Electrical Conductivity of Living Tissues 40

9/14

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

Page

3. Selection of the Area and Structural Design of the Electrodes 48
4. Selection of the Number of Electrodes and Their Spacing..... 52
5. Problems of Measurement Accuracy 55
6. Brief Conclusions 56
Chapter 3. Effect of Internal and External Factors on the Electrical Conductivity of the Skin 58
1. Studies of the Electrical Characteristics of the Fluid Electrode-Skin System 58
2. Electrical Conductivity of the Skin on Expansion and Contraction of the Skin Capillaries and Venous Stasis.......... 64
3. Electrical Conductivity of the Skin on Variation of the Skin Temperature and Atmospheric Pressure in a Liquid Electrode and During the Process of Death of the Animal..... 65
4. Electrical Conductivity of Human Skin on Halting of the Venous Outflow and Maintenance of Arterial Influx........... 67

10/14

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

Page
5. Electrical Conductivity of the Skin of a Rabbit After a Rapid Simulated Ascent in a Pressure Chamber to an Altitude of 4 km 68
6. Electrical Conductivity of Human Skin on Variation of the Temperature and Atmospheric Pressure in a Fluid Electrode .. 69
7. Electrical Conductivity of the Skin on Replacement of the Tap Water in the Liquid Electrode by an Isotonic Solution of Sodium Chloride and When Using Conducting Electrodes Made of Different Metals 71
8. State of the Electrical Conductivity of the Skin on Passage of X-rays Through It 72
9. State of the Electrical Conductivity of the Skin When Using Aqueous Solutions With Different Electrolyte Concentration in Liquid Electrodes 73
10. Electrical Conductivity of the Skin as a Function of Its Temperature 77
11. Electrical Conductivity of the Skin as a Function of Physical Load 80

11/14

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

Page

12. Magnitude of the Bioelectric Potentials of an Electrocardiogram as a Function of the Electrical Conductivity of the Skin 82
13. Brief Conclusions 84

Chapter 4. Methods and Instruments of Low Frequency Conductometry for Investigating the Permeability of the Skin and Perspiration. 84
1. Method of Recording the Perspiration Intensity 84
2. Method of Recording the Intensity of Evaporation of Moisture from the Skin Surface 86
3. Method of Recording the Conductivity of Small Amounts of Liquid 88
4. Method of Complex Determination of the Permeability of the Skin 91

Chapter 5. Estimation of the Functional State of the Skin by Means of the Methods of Low-Frequency Conductometry 92
1. Cutaneo-galvanic Reflex and Its Phases as a Function of the Presence and Activity of the Sweat Glands 92
2. State of the Sweating Apparatus of Athletes 94

12/14

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

Page

3. State of the Electrical Conductivity, Permeability and Diffusion of Water Vapor in Apparently Healthy and Psoriasis-Infected Parts of the Skin 99
4. Evaporation of Water from the Skin Surface as a Function of Its Temperature and Perspiration 100
5. State of the Electrical Conductivity of the Skin During the Development and Cessation of Sweating as a Function of the Electrolyte Concentration in the Conducting Liquid of an Electrode 102
6. Electrical Conductivity of Some Solutions and Sweat 103
7. Reliability of Estimating the Intensity of Sweating by Different Conductometric Methods 105

Chapter 6. Critical Estimate of Methods and Means of Low Frequency Conductometry 106
1. Estimation of the Methods and Means of Electrodermography . 106
2. Comparative Estimate of Electrometric Methods of Recording the Intensity of Sweating 109

USSR

SLYN'KO, P. P., Osnovy Nizkochastotnoy Konduktometrii v Biologii, Moscow, Nauka Press, 1972, 131 pp

Page
3. Estimating the Conductometric Methods of Studying the Intensity of Evaporation of Moisture From the Surface of the Skin 111
4. Possibilities of the Instrument Used to Determine the Electrical Conductivity of Small Volumes of Liquid 111
5. Objectivity of All-Around Determination of the Permeability of the Skin 112
6. Factors Which Must be Considered When Evaluating the Methods and Means of Low-Frequency Conductometry 113
1. Polarization of the Electrode-Skin System 113
2. Effect of the Characteristics of the Horny Layer on the Magnitude of the Electrical Conductivity of the Skin 114
3. Effect of the Activity of the Sweat Glands and Skin Temperature 115
4. "Imperceptible Perspiration," Diffusion of Water Vapor "Through the Skin" or Epidermal Hydrotransspiration 119
Bibliography 121

14/14

UDC 669.018.95

USSR

SLYS', I. G., PEREPELKIN, A. V., and FEDORCHENKO, I. M., Institute Problems of Material Science, Academy of Sciences Ukrainian SSR

"Structure and Properties of a Sintered Stainless Steel Containing Molybdenum Disulfide"

Kiev, Poroshkovaya Metallurgiya, No 9, Sep 73, pp 24-29

Abstract: The structural and phase properties and the physical and mechanical changes determined by them were studied when occurring in the sintering of steel Kh23N18 which contained from 10 to 50 wt% MoS_2. It was established that in sintering a composite in a medium which ensures high thermal stability of MoS_2 (such as dry argon), intensive diffusion interaction of the alloy elements and MoS_2 occurs with the formation of a heterogeneous structure consisting of iron and chromium sulfides and intermetallides and carbides. It was observed that a sharp change in the physical and mechanical properties of a sintered composite, upon increasing the MoS_2 above 50 vol%, was associated with the development of a new type structure in the material. It was established that, although the method of dynamic hot pressing ensures preservation of a significant amount of MoS_2 in the structure of the material, its hardness rises sharply. 2 figures, 4 tables, 16 bibliographic references.

USSR UDC 621.785

SLYS', I. G., FEDORCHENKO, I. M., YERMAKOVA, YE. N., and PUGINA, L. I.,
Institute of Problems of Material Science, Ukrainian SSR Academy of Sciences

"Investigation of the Process of Sulfurization of Cermet Stainless Steels: Report II"

Kiev, Poroshkovaya Metallurgiya, No 4, Apr 73, pp 37-43

Abstract: A new method of sulfurization of sintered materials is proposed and investigated. It is shown that for the process of sulfurization of stainless steels it is necessary to create conditions which will promote interaction of sulfur with alloy components. The conditions which increase reactivity of the alloy components. The conditions which increase reactivity of the alloy are: very long reaction surface, high concentration of defects of the crystalline structure, and heterogeneity of alloy microvolumes according to the chemical composition. The combination of sintering with sulfurization allows reduction of the temperature of sintering by 250-300°C. It is shown that sintered (in the presence of sulfur at 950°C) stainless porous steel is highly corrosion and wear-resistant during bearing contact.

1/1

USSR

UDC 621.762:669.018.24(088.8)

FEDORCHENKO, I. M., SLYS', I. G., PUGINA, L. I., YERMAKOVA, YE. N.

"Cermets Antifriction Material"

USSR Author's Certificate No 276425, Filed 14 Oct 68, Published 16 Oct 70 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G463P)

Translation: The material, based on stainless steel, contains Fe, C, Cr, and S. In order to improve the supporting capacity and corrosion resistance, Ni is introduced into the material, and the components are taken in the following ratios (in %): Cr 13-32, Ni 0.5-20, S 0.55-7.0, C 0.07-0.8, and Fe for the rest.

1/1

REEL #30
SHMYGANOVSKIY, V.
to
SLYS', I.G.